**ENTEROCOCCUS FAECALIS &
ENTEROCOCCUS FAECIUM**

**General Information**
Enterococcus faecalis and Enterococcus faecium are opportunistic pathogens. They are Gram-positive, non-motile, and facultatively anaerobic bacteria that are normally found in the gastrointestinal tract and can form biofilms.

**Host Range**
Humans, pets, livestock

**Incubation Period**
Unknown. Estimates of the incubation period for Vancomycin resistant enterococci (VRE) varies from days to weeks or longer.

**Survival Outside Host**
Enterococci can survive 5 days to 4 months on dry inanimate surfaces. Enterococci can grow, survive, and persist in many environments including soil, plants, water, and food.

**Laboratory Hazards**
Person-to-person transmission; primary lab hazards are ingestion and parenteral inoculation.

**Symptoms of Exposure**
Symptoms depend on the location of the infection. *E. faecalis* and *E. faecium* can cause urinary tract (UTI), wound, and soft tissue infections. General symptoms include fever, fatigue, and swollen lymph nodes (flu-like symptoms). Wound or soft tissue: pain, swelling, tenderness, and pus formation. UTI: abdominal pain, cloudy urine, and burning sensation.

**Lab Acquired Infections (LAIs)**
None reported; unknown

**Personal Protective Equipment**

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<thead>
<tr>
<th>Equipment</th>
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<tr>
<td>Lab Coat</td>
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<td>Gloves</td>
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<tr>
<td>Closed-toed Shoes</td>
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<td>*Eye Protection</td>
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* For potential splashes, sprays or droplets

**Disinfection & Inactivation**
Enterococci are resilient bacteria. They can survive in hot, salty, or acidic environments. There are some alcohol tolerant *E. faecium*. 3% hydrogen peroxide is ineffective. Refer to [EPA list H](https://www.epa.gov/hazardous-waste-management/vancomycin-resistant-enterococci-vre-disinfectants) for effective VRE disinfectants. Can be inactivated by autoclaving (121°C for 60min).

**Waste Management**
Refer to [UofSC’s Biological and Infectious Waste Management Plan](#).

**Lab Containment**
[Biosafety Level 2 (BSL-2)](#) for activities with materials and cultures known or reasonably expected to contain *E. faecalis* or *E. faecium*.

**Animal Containment**
[Animal Biosafety Level 2 (ABSL-2)](#) for activities with experimentally infected animals.

**Medical Surveillance/Treatment**
Surveillance: Monitor for symptoms; identified by bacteriological culture.

Prophylaxis: None

Vaccines: None

Treatment: Antibiotics; *E. faecalis* and *E. faecium* are intrinsically resistant to cephalosporins.

**Spill Procedures**
See [UofSC Biological Spill Procedures](#).

**Exposure Procedures**
See [UofSC Protocol for Post Exposure Evaluation and Follow-up](#). Use of sharps should be strictly limited. A biosafety cabinet should be used when there is a potential to create aerosols or droplets.

**References**
Agudelo Higuita NI, Huycke MM. Enterococcal Disease, Epidemiology, and Implications for Treatment. [https://www.medicinenet.com/vancomycin-resistant_enterococci_vre/article.htm](https://www.medicinenet.com/vancomycin-resistant_enterococci_vre/article.htm)


Public Health Agency of Canada. Pathogen Safety Data Sheets: Infectious Substances – Enterococcus faecalis and Enterococcus faecium